State of New Jersey

Jon S. Corzine
Governor

Department of Environmental Protection

Mark N. Mauriello
Acting Commissioner

Site Remediation Program
Hazardous Site Science Element
Bureau of Environmental Evaluation and Risk Assessment

MEMORANDUM

TO: Christopher Kanakis, Case Manager, OBR

FROM: David Barskey, Technical Coordinator, BEERA 12/9/2009

SUBJECT: Koppers Seaboard Site
Hackensack River Study Area
Supplemental Remedial Investigation Work Plan (January 2009)
29 January 2009 Submittal
Job: J070CL00 AC: V98K PI: G000001985
Date: 9 December 2009

As requested (received 17 March 2009), I have performed a cursory review of the Supplemental Remedial Investigation Work Plan (SRIWP) as prepared by ARCADIS and submitted by the Peninsula Restoration Group. A detailed review has not been performed, because a detailed review has already been completed and comments issued by Nancy Hamill, BEER/ETRA, so my review has focused on aspects of the SRIWP not dealt with in Nancy's comments (mainly sampling, analytical method, and QC issues). Therefore, there may still be problems and inaccuracies in the workplan that are not identified in the attached deficiencies/comments. In addition, I concur with Nancy's comments and with the 27 May 2009 comments from NOAA.

My review is based on the assumption that all data and information presented and discussed in the subject document and previous submittals are complete and accurate and that N.J.A.C. 7:26E requirements not included in this SRIWP will be fully addressed in the final SRIWP. Therefore, it should not be assumed where deficiencies/comments are not provided that the information or statement is necessarily correct or acceptable. Note that I have placed the applicable N.J.A.C 7:26E citation before the relevant deficiencies/comments, which are specific to the Koppers Site and not necessarily applicable to the other two sites to be addressed by the other two responsible parties in the Peninsula Restoration Group.

Please contact me with any questions or concerns with the attached deficiencies/comments, which have been entered into NJEMS on 9 December 2009.

Attachment

c: Teruo Sugihara, BEERA
Steven Byrnes, BEERA
Nancy Hamill, BEERA
George Nicholas, BGWPA
David Van Eck, BGWPA
Frank Faranca, BCM

C:\...\Koppers\River SRIWP, 9 December 2009 Comments on 29 January 2009 Submittal

Deficiencies/Comments
9 December 2009
Koppers Seaboard Site
Hackensack River Study Area
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Deficiencies/Comments

N.J.A.C. 7:26E-4.2(b)

1. Sections 1.1, 3.1.1, and 3.1.2: This DQO must be restated as the completion of the horizontal and vertical delineation of all site contaminants in surface water and sediment, not to just supplement the nature and extent of the site characterization of sediment contaminants. If additional surface water sampling is not needed based on previous sampling results and approvals from the NJDEP, then revise the SRIWP to clearly explain and justify why additional surface water sampling and analyses are not needed. However, if this is the case, then due to the long period of time that has passed since possible previous surface water sampling and analyses were completed, BEERA recommends that this work plan be revised to include surface water sampling and analyses to confirm that the sites are currently not resulting in contamination of surface water from direct site discharges or from sediment contamination. If this is not the case, then revise to include surface water sampling and delineation. Surface water samples must be collected at low, high, and slack tides pursuant to N.J.A.C. 7:26E-4.5(d)2i(5) from the water surface, just above the sediment surface, and within the water column where appropriate based on water column depth and tidal mixing zones.

2. Sections 3.1.4, 3.1.5, 3.2.1, 3.2.2, 3.2.3.4, and 4.1; Figures 4-1 and 4-2: Revise to justify the arbitrary limits of the study boundaries. Horizontal and vertical delineation of site contaminants shall continue until all site contaminants are delineated to the applicable remediation standards and criteria. Delineation my need to be accomplished for individual contaminants by establishing a gradient from the sites to lower concentrations in the river (focusing on migration of contaminants to depositional areas upstream and downstream of the sites due to tidal redistribution of contaminant discharges from the sites), particularly due to the difficulty in finding suitable background/reference areas in the river as detailed in the ETRA and NOAA comments. Additional sample locations and depths will be needed to accomplish this requirement, particularly adjacent to the sites, as exemplified by the additional areas of free and residual product encountered during the sediment excavations along the Koppers Site. BEERA recommends sample locations every 100 feet along the Koppers site boundary with delineation sample locations extending into the river at 50-foot intervals as shown on Figure 4-2 but extending along the whole length of the HRSA for contaminant specific as well as free and/or residual product delineation.

3. Section 4.3.2: Collection of just surface sediment samples is not acceptable. All sample locations must consist of cores so contaminants at each location can be vertically delineated. Due to reworking of sediment from tidal action, shipping, storm events, dredging, etc., deeper sediments may become surface sediments and result in new biologically active zones.

N.J.A.C. 7:26E-3.4(a)

4. Sections 4.1 and 4.3.1: Revise to justify the arbitrary use of prespecified sample locations and sample intervals. In addition to prespecified sample intervals, samples must also be collected from other intervals or the prespecified intervals must be adjusted based on sediment specific characteristics in each core, such as PID readings, odors, visual indicators of contamination, colors,

and changes in grain size or stratigraphy with these criteria listed in the revised SRIWP. Sample locations must be adjusted and added based on the shoreline observations of habitat, potential point source discharge locations (outfalls and site drainage points), and depositional patterns due to river tidal flow, which must be discussed in the revised SRIWP.

5. Section 4.1.1: Revise to require multiple core collections at individual sample locations as necessary to obtain sufficient sample volume or mass for the specified sediment analyses at each depth where samples will be collected. One core will not be able to obtain a sufficient volume or mass of sample for all the planned analyses, including what is needed for QC samples (i.e., MS/MSD and field duplicate).

N.J.A.C. 7:26E-3.6(a)5
6. Sections 4.1 and 4.1.1; Table 4-4: Revise to clarify that sediment samples will be collected from a 6-inch increment within each core interval listed on Table 4-4. The sample collection intervals within each core interval may be different for various types of contaminants (free product versus VOCs versus chromate waste, etc.). If more or less than a 6-inch increment is collected, an explanation must be included in the field documentation for inclusion in the RI report.

N.J.A.C. 7:26E-3.4(c)
7. Section 4.2: As confirmed with ETRA, compositing of sediment samples is prohibited except for waste classification purposes.

N.J.A.C. 7:26E-4.2(b)8
8. Section 4.4.2: Revise to clarify and justify the number of tide gages to be installed and explain how they will be used.

N.J.A.C. 7:26E-3.13(c)3v(2)
9. Section 4.4.4: Revise to detail how the vertical locational information (elevation in mean sea level) will be determined for the surface water and sediment samples.

N.J.A.C. 7:26E-2.1(a)17
10. Section 4.4.5: If surface water samples are collected for hexavalent Cr analysis, the sample bottles must be rinsed first with sample to ensure that any acid residuals from bottle cleaning are removed and to quench adsorption sites on the bottle surfaces, as no preservatives are added to water samples collected for hexavalent Cr analysis.

11. Sections 4.5, 7, and 7.1; Tables 4-9 and 7-1: Field rinsate blanks are not required for the sediment sampling and are of minimal value for this matrix.

12. Section 4.7: If surface water samples are collected, revise to address surface water samples.

N.J.A.C. 7:26E-2.1(a)7
13. Sections 4.5, 7.2, and 8.5: Revise to require the collection of and use by the laboratory of site samples for all QC analyses that require a field sample (e.g., MS/MSD), which is especially critical for the hexavalent Cr analysis. The data verification, validation, and usability requirements must be revised to incorporate this requirement.

N.J.A.C. 7:26E-2.1(a)1
14. Section 5.2.5: Revise to include affirmative documentation that each laboratory has the applicable certification for each analytical method and analyte.

15. Section 6.3: Any modification to an analytical method requires the laboratory to obtain certification for the modification pursuant to the NJDEP laboratory certification regulations at N.J.A.C. 7:18-2.8. In addition, all alternate test procedures also require laboratory certification pursuant to N.J.A.C. 7:18-2.20. Revise this section to explicitly state that these regulatory requirements will be met.

N.J.A.C. 7:26E-2.1(a)8
16. Section 6.4 and Tables 6-1 through 6-11: Revise to indicate and require that all SQLs/MDLs will, at a minimum, result in data reported at levels low enough so compliance can be determined with the applicable remediation standards and criteria.

N.J.A.C. 7:26E-2.2(a)1ii
17. Section 6.2.3: It is not clear how QC samples can be used to determine whether the data are representative of site-specific conditions, which is usually determined by the sampling design and methods used to collect samples representative of site conditions. Revise to clarify what QC samples will be used for this purpose and how the QC data will be evaluated to judge representativeness.

N.J.A.C. 7:26E-2.1(a)7
18. Section 7.2.4: Revise to discuss the specific predigestion soluble and insoluble spiking and postdigestion spiking requirements and QC criteria for the analysis of the sediment samples for hexavalent Cr by Methods 3060A and 7199. In addition the NJDEP requires (1) all samples analyzed for hexavalent Cr to also be analyzed for pH and Eh, not just the sample used for the predigestion spikes, (2) all samples in an analytical batch to be redigested and reanalyzed when any of the predigestion spike recoveries are outside the 75%-125% QC limits, and (3) the full data deliverables for the hexavalent Cr data to include plots of the Eh versus pH results for each sample on the graph included in Method 3060A.

N.J.A.C. 7:26E-2.1(a)16
19. Section 8.2.2 and 8.3: Revise to discuss and clearly specify the data deliverables formats for all data. Full data deliverables are required for all dioxins/furans and hexavalent Cr data for all media.

N.J.A.C. 7:26E-3.13(b)3i
20. Section 8.5.2: Revise to use the NJDEP data validation SOPs and forms for analyses where the NJDEP has such SOPs, rather than USEPA guidelines, as the data is being submitted primarily for compliance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E).

21. Section 8.5.3: Revise to discuss the data usability assessment of hexavalent Cr data based on the evaluation of sample-specific oxidizing versus reducing conditions pursuant to the Method 3060A and NJDEP requirements.

N.J.A.C. 7:26E-4.8(g)
22. Section 10: Revise to clarify that a complete remedial investigation report will be submitted that incorporates all previous investigation results from all three sites, including the December 2008 report, not just the results of this supplemental RI.

N.J.A.C. 7:26E-2.2(a)1v
23. Table 6-12: Revise to delete Method 3060A from the Water column for the hexavalent Cr analysis, as water samples are not digested prior to analysis by Method 7199.

24. Table 6-12: If surface water samples are collected, revise to include water methods for the pH and ORP analyses.

25. Table 6-12: Revise the Method references so that the most current version of the methods are listed and used. For example, SW-846 Method 7471A is listed for mercury, but the most current version is SW-846 Method 7471B.

N.J.A.C. 7:26E-2.2(a)1vi

26. Appendix A: If surface water samples are collected, revise to include a SOP for the collection of surface water samples.

27. Appendix A, SOPs No. 6 and 13: Section 2.2.6, item 2, in SOP 6 seems to conflict with the requirements in SOP 13. Excess sediment should not be returned to the river but collected for proper disposal in accordance with SOP 13. Revise SOP 6 and any other SOPs to conform to the handling and disposal requirements in SOP 13.